

Incidentally, as for the  $\text{Tm}^{3+}$ -doped fluoride fiber using the 1.2  $\mu\text{m}$  band excitation, there have been no reports. However, 1.9  $\mu\text{m}$  band laser oscillation by a Tm-Ho codoped fiber into which both  $\text{Tm}^{3+}$  and holmium (Ho) are doped is reported (see, non-patent document 3). The report, however, neither utilizes the laser transition of  $\text{Tm}^{3+}$  from the  $^3\text{H}_4$  to  $^3\text{H}_6$  [ $^3\text{H}_5$ ] level, nor relates to the 2.3  $\mu\text{m}$  band.

Please amend the abstract at the end of the application as follows:

#### ABSTRACT

New fiber lasers, spontaneous emission sources, and optical fiber amplifiers are provided. Their conventional counterparts, which have a fiber doped with thulium (Tm) ions and excited by 0.67  $\mu\text{m}$  or 0.8  $\mu\text{m}$  pumping light, have a problem in that their characteristics are deteriorated with the elapse of time. The new fiber lasers, spontaneous emission sources, and optical fiber amplifiers use 1.2  $\mu\text{m}$  light as pumping light. Alternatively, they use a pumping source for exciting the thulium from the lowest energy level  $^3\text{H}_6$  to  $^3\text{H}_5$  excitation level. As a more preferable configuration, they improve the emission efficiency at 2.3  $\mu\text{m}$  band by disclosing ~~defining~~ Tm-doped host glass.